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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,027	08/07/2001	Mitchell M. Jackson	3091R	3043

7590

08/27/2003

THE LUBRIZOL CORPORATION
Patent Administrator - Mail Drop 022B
29400 Lakeland Boulevard
Wickliffe, OH 44092-2298

EXAMINER

TOOMER, CEPHIA D

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 08/27/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/924,027

Applicant(s)

JACKSON ET AL.

Examin r

Cephia D. Toomer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 16, 2003 has been entered.

2. This Office action is in response to the amendment filed June 16, 2003 in which claims 2 and 5 were canceled. Claims 1, 3, and 6-15 are currently pending in the application.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3 and 6-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Harle (US 4,166,726).

Harle teaches a diesel fuel composition for reducing deposits. The composition comprises a mixture of a polyalkylene amine and a Mannich base reaction product (see abstract; col. 1, lines 5-37; examples).

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The Mannich base is prepared by reacting an alkylated phenol wherein the alkyl groups have from 1-100 carbon atoms (polybutylene), formaldehyde, and amines (N,N-dimethylamino-propyleneamine)(see col. 2, lines 1-64).

The polyalkylene amine may be polyisobutylene ethylenediamine, diethylenetriamine, etc. (see col 3, lines 25-38; col. 4, lines 4-23 and claim 14). The polyalkylene amine has a molecular weight in the range of 220-2700 (see col. 4, lines 24-29).

The additives are each present in the fuel composition in an amount from 25 to 100 ppm (see col. 4, lines 42-49). The ratio of the polyalkylene amine to the Mannich base is from 1:19 to 19:1 (see col. 4, lines 59-62).

Harle also teaches that the composition may contain additives that have demulsifying properties, for example, polyolpolyethers.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 6-10 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham(US 5,679,116) with Udelhofen (US 4,231,759)as an evidentiary reference.

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Cunningham teaches fuel additives and fuel compositions for controlling deposits comprising gasoline or diesel, a detergent/dispersant selected from a long-chain aliphatic hydrocarbon having a polyamine attached directly thereto and/or a Mannich condensation product formed by reacting a long-chain hydrocarbon substituted hydroxyaromatic compound, an aldehyde and an amine wherein the long-chain group in the polyamine and hydroxyaromatic compounds is derived from polyolefins, such as polyisobutylene (see abstract; col. 7, lines 32-44). The composition may also contain a carrier fluid, such as a polyoxyether (see col. 11, lines 24-35; col. 12, lines 60-67; col. 8, lines 1-12).

The hydrocarbyl-substituted amine is derived from such amines as ethylene diamine and diethylene triamine (see col. 4, lines 3-15). The polyamine of the Mannich product may be ethylene diamine, diethylene triamine, etc (see Udelhofen col. 5, lines 12-42. Udelhofen is incorporated by reference in Cunningham). The hydroxyaromatic compound of the Mannich product may be phenol as taught by Cunningham or a long-chain hydrocarbyl substituted cresol, as evidenced by Udelhofen. The aldehyde is preferably formaldehyde (Cunningham at col. 7, lines 51-64; Udelhofen at col. 4, lines 59-65). Cunningham also teaches that the composition may contain an oxygenate additive (see col. 21, lines 14-22). The detergent/dispersant is present in the fuel composition in an amount from about 20 to about 500 ppm and the carrier fluid is present in a ratio of carrier fluid to detergent/dispersant is in the range of 0.05:1 to about 0.5:1 (see col. 14, lines 48-53, 61-62; col. 15, lines 1-5).

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Cunningham teaches the limitations of the claims other than the ratio of hydrocarbyl-substituted polyamine to the Mannich reaction product. However, it would have been obvious to one of ordinary skill in the art to have prepared the composition containing the compounds within the claimed ratio because Cunningham teaches that both the hydrocarbyl amine and the Mannich reaction product may be present in the composition, and this teaching suggests at least a ratio of 1:1.

7. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham as applied to the claims above, and further in view of Malfer (US 5,725,612).

Cunningham fails to teach that the polyisobutylene has at least 70% of its olefinic double bonds as vinylidene double bonds. However, Malfer teaches this difference (see col. 3, lines 26-52).

It would have been obvious to one of ordinary skill in the art to have prepared the compounds with a polyisobutylene having at least 70% of its double bonds as vinylidene double bonds because Malfer teaches that compounds prepared with this type of polyisobutylene are more reactive.

8. Claims 1, 3 and 6-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malfer (US 5,725,612) in view of Aiello (US 5,006,130).

Malfer teaches a fuel composition, preferably gasoline, comprising a Mannich reaction product and a polyoxyalkylene carrier (see abstract). The Mannich reaction product is prepared by reacting a hydrocarbyl substituted hydroxyaromatic compound having a polyolefin and a C₁-C₄ alkyl substituent, an aldehyde (formaldehyde) and a

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polyamine, such as N,N-dimethylpropylenediamine (see col. 2, lines 30-57). The hydrocarbyl group of the hydroxy aromatic compound is a polyisobutylene (MW 500-3000) that has at least 70% vinylidene double bonds (see col. 3, lines 1-25, 48-56). The weight ratio of carrier to Mannich reaction is about 0.3:1 (see col. 8, lines 14-27). The Mannich reaction product is present in the composition in an amount from about 5 to about 150 ptb (2-60 ppm) (see col. 8, lines 57-63). The composition may also contain oxygenates, such as MTBE (see col. 9, lines 20-39).

Malfer teaches the limitations of the claims other than that the composition contains a hydrocarbyl polyamine detergent. However, Aiello teaches this difference.

Aiello teaches a fuel composition for reducing engine deposits comprising at least 2.5ppmw of an oil-soluble aliphatic alkylene polyamine and a polyoxy ether carrier wherein the ratio of basic nitrogen to carrier is about 0.02 or higher (see abstract; col. 2, lines 48-51). The aliphatic substituent has a molecular weight of from 500-9900 and may be a polyisobutylene group. The polyamine portion of the compound may be ethylene diamine, diethylene triamine, etc (see col. 3, lines 3-58). The composition may also contain an oxygenated blending agent (see col. 7, lines 5-15).

It would have been obvious to one of ordinary skill in the art to have combined the Mannich reaction product detergent/dispersant of Malfer with the polyamine detergent of Aiello because it is prima facie obvious to combine two composition each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose. *In re Kerkhoven*, 205 USPQ 1069. With respect to the ratio of polyamine to Mannich product, it would be reasonable to

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combine these components at least in a proportion of 1:1 given that each component is used for the same purpose.

9. Applicant's arguments have been fully considered but they are not persuasive..

Applicant argues that unexpected results are obtained when the fuel composition contains the combination of polyamine and Mannich base, as opposed to fuel compositions wherein a single Mannich base or polyamine detergent is present. Applicant argues that the prior art may suggest combining the two detergents but fails to suggest the unexpected results obtained with the combination of the two detergents.

Harle clearly teaches the claimed combination of polyamine and Mannich base. With respect to Applicant's alleged unexpected results, Applicant's data have been considered but are not deemed to constitute unexpected results. The showings are not commensurate in scope with the claims. The additives of the base claim are generic to polyamines and one type of Mannich base. The claims are open to a huge number of compounds and are not limited to the specific compounds of the showings. Also, in the showings the ratio of the polyamine to the Mannich base is about 1:1, whereas the claims recite a different ratio. It cannot be ascertained from the data that unexpected results are obtained.

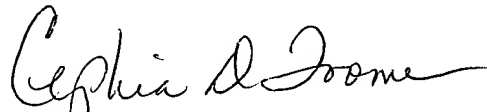
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 703-308-2509. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone

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number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Cephia D. Toomer
Primary Examiner
Art Unit 1714

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